Leading the Launch

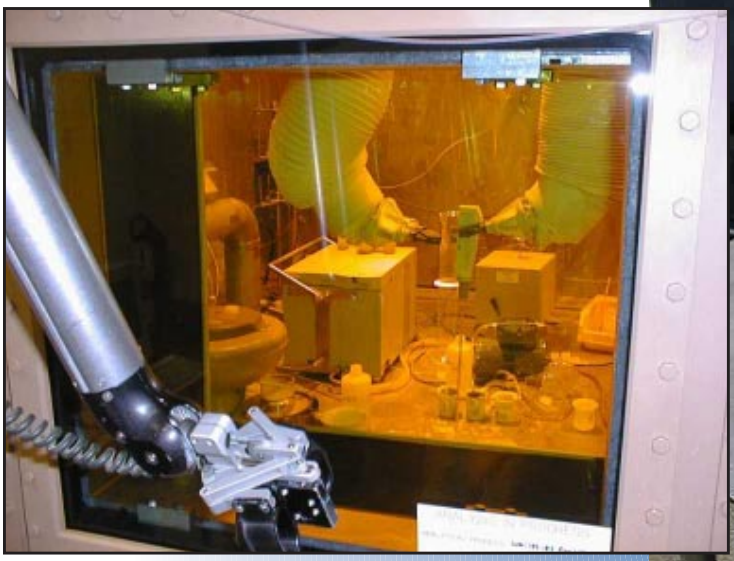
Delivering a payload of responsive technologies

Technology Deployment

IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY

INEEL

HOME OF SCIENCE AND ENGINEERING SOLUTIONS



Remote Particle Size Distribution Analyzer

Problem
INEEL's High-Level Waste (HLW) Pretreatment project needed to characterize the size distribution of particles in highly radioactive liquids to safely store and treat the contents of tanks at the Idaho Nuclear Technology and Engineering Center.

Baseline Technology
Microscopic examination of sediments.

Innovative Technology
The Remote Particle Size Distribution Analyzer, a laser scattering instrument that determines particle size distribution, was adapted for remote operation in INEEL's Remote Analytical Laboratory.

Comparison
This analyzer allows direct measurement of particle size and distribution, and minimizes handling of highly radioactive samples.

Benefits
This analyzer enabled the project to obtain particle size distribution data required to design new treatment systems and model the transfer of sodium-bearing wastes to those systems.

Project: ID-HLW-101
High-Level Waste Pretreatment
Non-OST

Remote Particle Size Distribution Analyzer

(refer to photos on page 36)

Problem
INEEL's High Level Waste (HLW) Treatment and Storage project needed to characterize the size distribution of particles in highly radioactive liquids to plan the immobilization of HLW stored at the Idaho Nuclear Technology and Engineering Center.

Baseline Technology
Microscopic examination of sediments.

Innovative Technology
The Remote Particle Size Distribution Analyzer, a laser scattering instrument that determines particle size distribution, was adapted for remote operation in INEEL's Remote Analytical Laboratory.

Comparison
This analyzer allows direct measurement of particle size and distribution, and minimizes handling of highly radioactive samples.

Benefits
This analyzer enabled the project to obtain particle size distribution data required to plan the immobilization of sodium-bearing and calcined wastes.

Remote Particle Size Distribution Analyzer

(refer to photos on page 36)

Problem
INEEL's Closure and Stabilization Activities project needed to characterize the size distribution of particles in highly radioactive waste tank residues to develop plans for closure of underground storage tanks at the Idaho Nuclear Technology and Engineering Center.

Baseline Technology
Microscopic examination of sediments.

Innovative Technology
The Remote Particle Size Distribution Analyzer, a laser scattering instrument that determines particle size distribution, was adapted for remote operation in INEEL's Remote Analytical Laboratory.

Comparison
This analyzer allows direct measurement of particle size and distribution, and minimizes handling of highly radioactive samples.

Benefits
This analyzer enabled the project to obtain particle distribution data required to develop treatment and stabilization processes for tank residues.